Sudbury District Fisheries Management Plan 1990 - 2000

Ontario

Ministry of
Natural
Resources

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Minister

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PREFACE

This fisheries management plan provides long term fisheries management direction (1990-2000), for both inland and Great Lake fisheries within the Sudbury Administrative District. The plan has been prepared under the general context of objectives and targets provided in the Sudbury District Land Use Guidelines (D.L.U.G.).

The purpose of this management plan is to state fisheries management objectives and detail specific strategies and tactics that will be undertaken within the planning period. The direction contained within this plan is based upon analysis of the Summary of Background Information and Management Options (1987) and public response to that document.

This fisheries management plan is comprised of resource information, management strategies and the first five year implementation schedule. The implementation schedule outlines the operational tactics designed to implement specific management strategies.

This plan is designed to provide guidance to local fisheries managers as well as indicate future management direction to the public.

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1.0 INTRODUCTION

1.1 PURPOSE

The Sudbury District Fisheries Management Plan is being prepared to provide approved long-term resource management direction for fisheries resource managers and to inform others of proposed management activities. Short term management actions to be implemented in two 5 year segments, are also provided in an implementation schedule. The first implementation schedule, included with this Plan, covers the next five years from April 1, 1990 to March 31,1995. A subsequent schedule will be prepared for the following five year interval.

This Draft Fisheries Management Plan incorporates public comments received during review of the Background Summary and Management Options document. It is the fifth step of a six step planning process. The last step in the process will be preparation of a final Fisheries Management Plan, including the initial implementation schedule. Annual work program plans will be prepared in accordance with this.

The location of Sudbury Administrative District of the Ministry of Natural Resources is shown in Figure 1. This Fisheries Management Plan provides management direction for fisheries in the waterbodies located with this District.

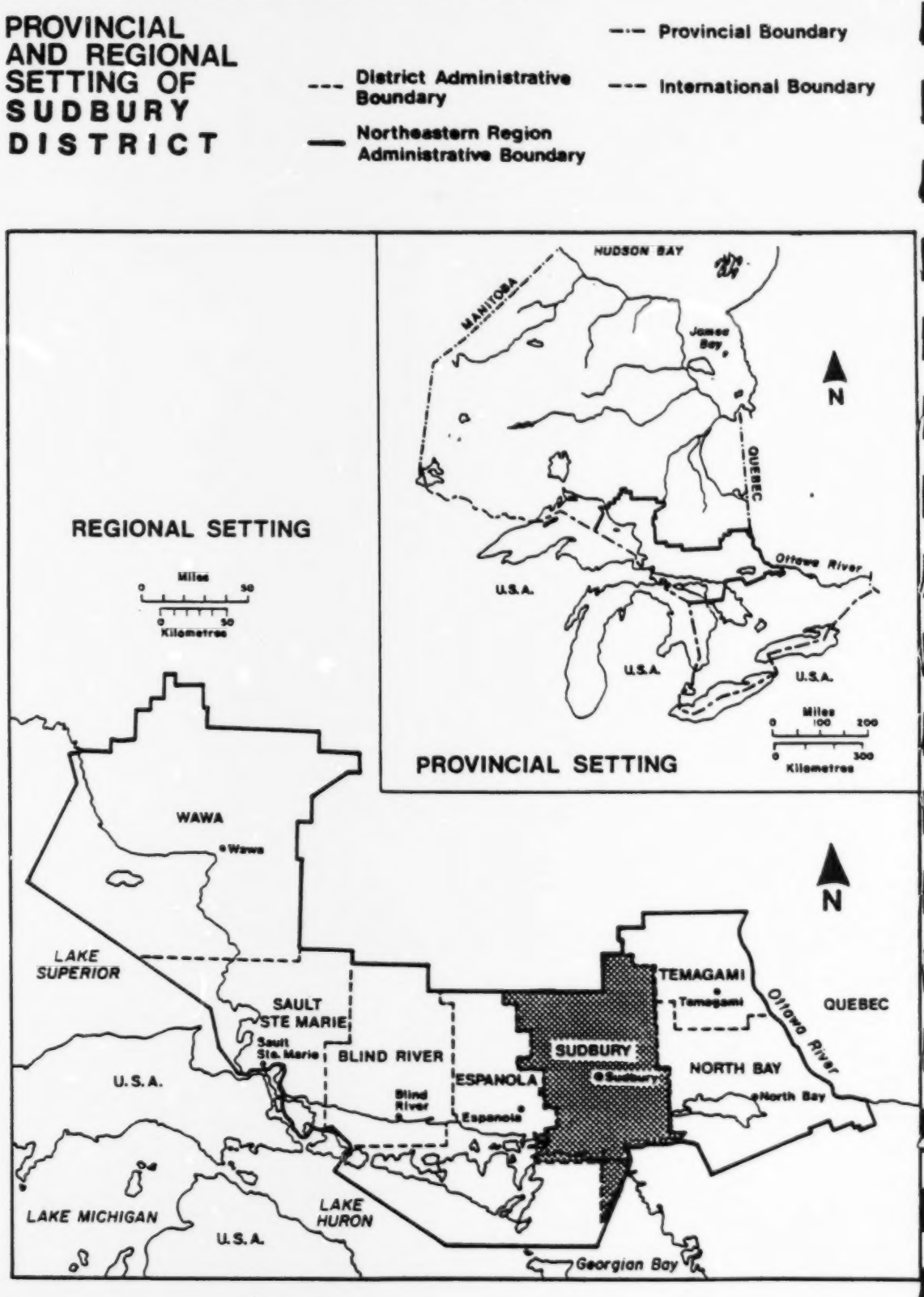
1.2 PLANNING PROCESS AND TECHNICAL DIRECTION

The procedures followed in preparing this Fisheries Management Plan conform to the planning process outlined in the report entitled A Framework for Resource Management Planning in MNR, (1986).

A formalized land use planning process for this area was initiated with the Strategic Land Use Plan for Northeastern Ontario (1982). This planning process provided general direction for integrated resource management, and was followed by the Sudbury District Land Use Guidelines which identify targets for all Ministry programs including fisheries management and outline generally, how management efforts will be directed toward achieving program targets with a minimum of conflict. The objectives and targets presented in these Guidelines for the District's fisheries resources are being reviewed and modified where necessary as part of the process for this Fisheries Management Plan.

The general policy framework, management principles, goals and objectives for fisheries management in the province of Ontario originate from the federal-provincial task force on Strategic Planning for Ontario Fisheries (S.P.O.F. 1976). SPOF is presently being revised to reflect new directions in fisheries management

FIGURE 1. SUDBURY ADMINISTRATIVE DISTRICT



for the 1990's (SPOF II draft, 1990).Management direction provided by these planning documents will be reflected in proposals presented for inland waters in this Fisheries Management Plan.

Emanating from S.P.O.F., the Lake Huron Strategic Fisheries Management Plan (1986), was prepared to provide a comprehensive lake-wide management strategy for individual administrative districts around Lake Huron. Management strategies and tactics proposed for Sudbury District's portion of Georgian Bay reflect this Plan.

The Ministry of Natural Resources follows a policy of integrated resource management. Integrated Resource Management is the coordination of resource management programs and activities so that long term benefits are optimised and conflicts between programs are minimized. The information presented in this Fisheries Management Plan will be incorporated to other resource management plans, such as the District Timber Management Plans for the three Crown Units and the Lower Spanish Forest FMA (1990-95), and the District Road Use Strategy. This Plan and its implementation schedule will also provide direction for a District Enforcement Plan and a District Bait Fish Management Plan by identifying priorities and needs related to both the enforcement as well as the bait fish management programs.

1.3 BACKGROUND INFORMATION

This management plan only highlights some of the background studies, planning efforts and analyses undertaken as part of the fisheries management planning process. The following supporting documents or analyses were prepared for the development of this Plan and are available at the Sudbury District Office:

- Terms of Reference: identified what was to be accomplished, who would be involved in the planning process and when each stage would be completed.

- Detailed Background Information: provided a comprehensive analysis of information about the District's waterbodies and their fish populations, allowable yields, critical fish habitats, fisheries resource use and projected demand, problems and current management practices.

- Background Information and Optional Management Strategies and Tactics: A Summary document, summarized the background information and highlighted problems and optional management strategies and tactics to enable public to review and input.

- Summary of Public Response to Background Information and Optional Strategies and Tactics, summarized results of public comment on the Background Information and Optional Strategies and Tactics.

2.0 DISTRICT FISHERIES PERSPECTIVE

2.1 THE RESOURCE BASE

The Sudbury Administrative District is located in the mid-eastern portion of the Ministry of Natural Resources' Northeastern Region. The District boundaries have recently been amended through the transfer of jurisdiction for Acadia, Dundee and a portion of Ellis townships to Temagami District, (Figure 1). The amended boundaries of Sudbury District encompass a total combined land and water area of approximately 13,000 square kilometers, of which 80% is Crown Land.

Amendments to jurisdictional boundaries, combined with new information obtained through the Timber Management Planning exercise and reworking of the background data have resulted in a refinement of the resource base. The new District boundaries encompass a total water area of 281,527 hectares, including 126,027 hectares of inland water and 155,500 hectares of Georgian Bay, (Table 1). There are 6933 inland lakes, ranging in size from 0.4 ha. to 13,000 ha., with a combined area of 110,044 hectares. The District also has 543 km. of coldwater streams and 755 km. of warmwater streams which are considered significant to the fisheries resource, (DFMP Background, amended 1989).

The climate of the District is moderated slightly by the effects of Georgian Bay. However, the area is usually dominated by Continental polar air masses. The mean daily temperature for July is 18.8C and average January temperature is -13.4C, (SLUP 1982).

The two major drainage systems in the District include the Sturgeon-Wanapitei-French Rivers and their tributaries in the east and the Spanish and Vermilion River systems in the west. Both of these systems flow south into Georgian Bay and the North Channel of Lake Huron.

The estimated potential fish production (yield), of all waterbodies in the District including Georgian Bay, is 656,095 kg. per year, (Table 1). The total estimated allowable harvest for the District is 285,100 kg. per year, assuming that all waters are realizing their full production potential (Table 2). Trout species will contribute approximately 71,000 kg. per year and walleye will provide more than 85,000 kg. of this total.

TABLE 1

SUMMARY OF FISHERIES RESOURCE INVENTORY SUDBURY DISTRICT, 1989

WATER TYPE	NUMBER	TOTAL AREA (Ha)	PERCENT OF TOTAL	ESTIMATED TOTAL POTENTIAL YIELD (Kg/Yr)
INLAND				
COLDWATER LAKES				
– surveyed	60	10,653		31,100
– unsurveyed	78	31,442		91,200
– underproducing	138	20,010		66,000
TOTAL	276	62,105	22.1 %	188,300
WARMWATER LAKES				
– surveyed	68	8,249		32,300
– unsurveyed	144	9,375		36,600
– underproducing	45	3,200		11,800
TOTAL	257	20,824	7.4 %	80,700
RIVERS AND STREAMS				
– coldwater	51	810 (543 km)		4,300
– warmwater	36	14,309 (755 km)		138,800
TOTAL	87	15,173(1,298 km)	5.4 %	143,100
UNKNOWN FISH COMMUNITIES				
– lakes	6,400	27,115	9.6 %	92,200
			(Sportfish	23,000)
– rivers	73	810 (390 km)		3,000
			(Sportfish	700)
GRAND TOTAL				
Lakes	6,933			
Rivers	160			
		126,027	44.8 %	539,200
GEORGIAN BAY		155,500	55.2 %	116,895 **
DISTRICT TOTAL		281,527		656,095

* Revised from DFMP Background Information to reflect new District boundaries

** Lake Huron Fisheries Assessment Unit, 1986

TABLE 2

TOTAL ESTIMATED ALLOWABLE YIELD OF SPORTFISH SPECIES FROM LAKES AND STREAMS IN SUDBURY DISTRICT

SPORT FISH SPECIES	NUMBER OF WATERBODIES WITH SPECIES PRESENT		WATERBODIES AVAILABLE TO SPECIES			TOTAL ESTIMATED ALLOWABLE HARVEST (Kg/Yr)	PERCENT OF TOTAL
	Lakes	Streams	Lakes (Ha)	Streams (Ha)	(Km)		
INLAND WATERS							
Brook Trout	55	41	1,899	228	455	1,582	0.70 %
Lake Trout	144		54,028			36,598	15.90 %
Rainbow Trout	4	2	46	20	39	63	0.03 %
Splake	3		291			237	0.10 %
Lake Whitefish	12		31,946			21,927	9.50 %
Northern Pike	159	26	31,519	12,438	387	57,000	24.70 %
Muskellunge	6	3	4,631	99	54	5,094	2.20 %
Smallmouth Bass	95	12	17,486	13,752	493	30,871	13.40 %
Largemouth Bass	6	3	253	8	19	151	0.07 %
Walleye	72	12	45,919	14,182	564	77,075	33.40 %
TOTAL						**230,592**	**100.00 %**
GEORGIAN BAY +	1		155,500				
Salmonids						31,225	
Northern Pike						9,600	
Bass						5,700	
Walleye						8,000	
TOTAL						**54,525**	
DISTRICT TOTAL						**285,100**	

* Allowable Yield Estimates are for rehabilitated fish communities

\+ Ref.: Lake Huron Fisheries Assessment Unit, 1986

- 2,000 kg Walleye; 1,750 kg Northern Pike allocated to commercial fishery

At present, not all District waters are producing to their full potential as a result of a variety of stresses including acid precipitation, exploitation and water level drawdowns. Present and future management activities will be directed at bringing these waters to full production potential.

2.2 CURRENT AND PROJECTED RESOURCE USE

SPORT FISH

The current sport fishing pressure in Sudbury District is estimated at 404,000 angler-days annually, (Table 3). An angler-day is considered to be four hours of fishing by one angler. Inland waters provide the majority of these opportunities. According to District creel data and the Provincial Angler Survey (1980), anglers harvest approximately 180,600 kg. of fish annually from District waters. Harvest data indicate walleye comprise 40% of the catch, while trout contribute 15% and other species such as pike and bass make up the remainder, (DFMP Background 1987).

The total estimated angling pressure on District waters is expected to increase 12% by the year 2000. The projected number of angler days is therefore, expected to be 452,600 with an anticipated annual harvest exceeding 202,000 kg. of fish, (Table 3).

There are approximately 90 tourist establishments in Sudbury District who rely on sport fishing for part of their business. More than 30% of these businesses are located along the French River, where client angling is targeted on walleye.

COMMERCIAL FISH

There are seven commercial fishing licenses issued in Sudbury District for Georgian Bay. Licensees are allowed to use 3 pound nets and 137,500 metres of gill net. A license is also issued for Lake Wanapitei; the licensee is allowed to use up to 5000 metres of 11.4 cm. gill net mesh to harvest whitefish. The reported harvest of whitefish from Lake Wanapitei during 1987 was 632 kg. with a total value of $2,092.50. In 1985 the reported commercial fish harvest from Georgian Bay consisted of 3,839 kg. of chub; 5020 kg. of menominee; 916 kg. of lake trout backcross; 13,524 kg. of yellow perch; 293 kg. of northern pike; 7,782 kg. of whitefish; 460 kg. of walleye; and 1335 kg. of herring for a total harvest of 33,169 kg. The total landed value of the catch was $63,493.90.

In comparison to allowable quotas, most of these species are presently under harvested due to market conditions, (Table 4). Commercial quotas, as well as the issuing of the experimental permit on Lake Wanapitei, are reviewed annually and may be adjusted when biological data suggest it is necessary. New entries into the Sudbury District commercial fishery are not anticipated during this planning period.

TABLE 3

SPORT FISHERY IN SUDBURY DISTRICT - CURRENT RESOURCES USE; PROJECTED DEMAND AND POTENTIAL ALLOWABLE YIELD

	Current Use		Projected Demand		Current ` Potential Yield	Estimated Surplus (+) Deficit (-)
	Angler Days~	Harvest (kg/yr)	Angler Days	Harvest (kg/yr)		
Inland Waters						
Trout (15%)	59175	26600	66300	29800	38500	+8700
Walleye (40%)	157800	71000	176700	79500	77075	-2425
Other ++ (45%)	177525	79900	198800	89500	115000	+25500
TOTAL +++	394500	177500	441800	198800	230575	+31775

	Current Use		Projected Demand		Current Potential Yield	Estimated Surplus (+) Deficit (-)
	Angler Days~	Harvest (kg/yr)	Angler Days	Harvest (kg/yr)		
* Georgian Bay						
Salmonids	1440	500	1600	600	31225	+30625
Walleye	3840	1200	4300	1300	8000	+6700
Other ++	4320	1400	4900	1600	13650	+12050
TOTAL	9600	** 3100	10800	3500	52875	+81150
District Total	404100	180600	452600	202300	283450	0

` Potential annual production for rehabilitated fish communities

~ One angler-day is equivalent to 4 hours

(%) Harvest distribution, Sudbury District, (Prov. Angler Survey 1980)

++ Other - included Whitefish, Northern Pike Muskellunge; Bass

+++ Amended from DFMP Background Information and Management Options Summary Document (1987), to reflect DLUG and revised District boundaries. Average harvest = 0.45 kg/angler-day, (DLUG 1983)

* Assumes harvest distribution is same as for inland waters

** Average harvest = 0.32 kg/angler-day, (draft Lake Huron Strategic Fisheries Management Plan 1986).

TABLE 4

COMMERCIAL FISHERY IN SUDBURY DISTRICT
CURRENT USE AND PROJECTED RESOURCE DEMAND

	Current Use			Projected Demand		
	No. Of Licenses	No. Of Licenced Areas	Harvest Dozen/Yr	No. Of Licenses	No. Of Licenced Areas	Harvest Dozen/Yr
Inland Waters *						
Bait Fish	68	143	107600	76	160	121000
Georgian Bay						
Food Fish	No. Of Licenses	Harvest Quota (kg/yr)+		No. Of Licenses	Quota (kg/yr)	
	7			not more than 7 **		
Salmonids			1275		1275	
Whitefish			9200		9200 ++	
Chub			16500		16500	
Yellow Birch			19500		19500 ++	
Northern Pike			1750		1750	
Walleye			2000		2000	
TOTAL			50225		50225	

* 1988 report. Projected harvest demand is based on 10-year average harvest (1979-1988).

\+ 1985 harvest quotas. Quota increases are not expected.

** New entries into the Sudbury District commercial food fish industry are not anticipated in this planning period, (1990-1994).

++ Future quotas for whitefish and perch may require a downward adjustment to reflect changes in fish community structure, pending establishing of lake trout or lake trout backcross.

BAIT FISH

In 1988 there were 68 bait fish harvesting licenses and 143 areas licensed for harvest within the District, (Table 4). There were 166,322 dozen bait fish caught in 1988 and the value of bait fish caught and sold was $242,504. The 10-year average for bait fish harvest is 107,600 dozen. The demand for bait fish is expected to increase 12% by the year 2000, corresponding to the anticipated increase in angling pressure. This would result in a projected average annual bait fish harvest of 121,000 dozen.

2.3 PROBLEMS AND ISSUES

There are numerous problems and issues affecting the fisheries resource and its management. A review of the background information and analysis of public response identified five major fisheries management problems and issues in Sudbury District. These are described below for the entire District, in general order of importance. This order may be different for individual management zones. Fisheries targets and objectives can only be achieved if these problems and issues are addressed.

2.3.1 Loss or degradation of fish habitat

This includes both the loss or degradation of physical features such as spawning beds and nursery areas as well as the impairment of water quality. Factors which can contribute to this problem in Sudbury District are presented, in order of significance: industrial pollution, effects of acid precipitation, shoreline modifications, water level fluctuations, mineral exploration and forest management practices, drainage programs, agricultural activities, and contaminants such as mercury. There has been increased interest in recent years by the private sector, to develop small scale hydro electric generating sites. Developments of this nature can have a significant impact on fish habitat.

2.3.2 Exploitation

The removal of fish from a water body for sport or commercial purposes is referred to as exploitation; when in excess, it is a major concern to fisheries managers.

Exploitation becomes a problem if too many fish are removed from a particular waterbody. This may cause depletion of fish stocks to an extent where productivity is reduced. It can also result in a poorer quality of fishing experience, through reduced catches.

Illegal harvest activities, such as catching over the legal limit, fishing out of season or in a sanctuary, fishing with restricted gear such as set lines or too many lines, can contribute to the over-fishing problem. In many instances, illegal fishing activities occur during spawning periods and can result in a

reduction or loss of brood stock, leading to long term reduction in available fish to the creel.

2.3.3 User Conflicts

Sometimes competition for a fisheries resource exists between a variety of groups using the resource. Competition for fisheries may also arise as a result of additional access to a remote fishery. Such competition can result in conflict between competing user groups and can contribute to the over-fishing problem and in some instances, may contribute to fish habitat degradation (e.g. resource extraction in a tourism area). Examples of user groups competing for fisheries resources include:

(a) local anglers and tourist industry;
(b) summer anglers and winter anglers;
(c) commercial fishermen and sport anglers;
(d) tourist industry and resource extraction industries (i.e. mining and timber);
(e) sport anglers and native fishermen.

2.3.4 Lack of Public Awareness

Increased public awareness of fundamental fisheries management concepts and issues is important to the success of this Ministry's management efforts. It is essential that members of the public understand the problems and their underlying causes while appreciating the concepts of aquatic ecosystem productivity; species interactions; and sound management practices. Misconceptions regarding fisheries management can lead to unrealistic expectations about resource capability and limited attention to fisheries concerns.

2.3.5 Insufficient Fisheries Information

Fisheries managers must have access to a good data base in order to effectively manage the fisheries resource. More information is required about use of and demand for the resource; fish communities and their associated habitats; species interactions and causes of stock depletions; stream fisheries and the effectiveness of fish stocking.

3.0 MANAGEMENT DIRECTION

3.1 GENERAL FISHERIES MANAGEMENT GOALS AND OBJECTIVES

The goal of the Ministry of Natural Resources is:

"To provide opportunities for continuous economic and social benefits to the people of Ontario through the development and conservation of Ontario's natural resources."

The Ministry's goal for Ontario's fisheries is:

"Healthy aquatic ecosystems that provide sustainable benefits to satisfy, in part, society's requirements for:

- a high quality environment;
- wholesome food;
- employment and income;
- recreational activity." (SPOF II, 1990 draft)

In order to achieve sustainable benefits over the next decade and beyond, the revised objectives of the Strategic Plan for Ontario Fisheries, (SPOF II 1990 draft), shall be:

. To protect healthy aquatic ecosystems;
. To rehabilitate degraded aquatic ecosystems; and
. To improve benefits from Ontario's fisheries resource.

3.2 SPECIFIC FISHERIES MANAGEMENT OBJECTIVES AND TARGETS

Specific objectives and targets were identified in the Sudbury District Land Use Guidelines (DLUG, 1983), for sport fishing, lake trout and commercial fishing. Following a review and updating of fisheries resource data, some of these objectives and targets have been revised or combined. Objectives and targets for bait fish have also been included. These revised objectives and targets are outlined below.

3.2.1 SPORT FISH

OBJECTIVE:

To maintain opportunities for a diversified angling experience and to satisfy the future angling demand for all species within the limits of sustained yield management.

TARGET:

To satisfy annual demand by the year 2000, for 452,600 angling opportunities annually, based on allowable harvest of 202,300 kg. of fish.

DISCUSSION:

The DLUG target for the sport fishery on inland waters was 452,000 angler-days annually. Adjustment of District boundaries, (i.e. transfer of management jurisdiction of Acadia, Dundee and part of Ellis townships to Temagami District), and revision of fisheries data indicate the anticipated number of angler-days will be closer to a total of 453,000 angler-days for all District waters by the year 2000, (i.e. 442,000 for inland waters and 11,000 on Georgian Bay).

Anglers on inland waters currently represent more than 80 per cent of fishing pressure in the District. In some areas fish species are being harvested at a level within the allowable yield. In other areas, particularly in Zones 3, 5 and 7 waters are not producing to their full potential, primarily due the effects of acid precipitation. Walleye are over harvested in local areas, particularly along the French River. The estimated angling pressure for District waters is expected to increase 12 per cent by the year 2000. This will result in a demand for walleye which exceeds the allowable yield.

The estimates for allowable harvest presented in Table 2 are based on fully rehabilitated fish communities. It is not possible to meet the demand for walleye within the District, even when waters capable of producing this species are realizing their full production potential. Therefore, management effort will be directed at stocking walleye to provide angling opportunities.

At present, the demand for other species such as bass, pike, perch and whitefish is well below their production potential. Encouraging a greater use of these species will help to meet future demand for fishing opportunities.

3.2.2 LAKE TROUT

OBJECTIVE:

To manage for the survival and maintenance of significant lake trout populations as well as the provision of angling opportunities.

TARGET:

To rehabilitate 20,000 ha. of underproducing lake trout waters to full production potential; and to increase the allowable harvest of lake trout by an additional 16,000 kg. per year by the year 2000.

DISCUSSION:

When the District Land Use Guidelines were prepared, all District lake trout lakes were divided into five categories, (see DLUG 1983).

New information obtained through recent creel surveys confirms improvements in some lake trout fisheries. As a result, the DLUG categorization requires amendment for nine lakes. The proposed revision for these lake trout lakes is shown in Appendix 1. Management strategies outlined in DLUG remain unchanged.

3.2.3 BAIT FISH

OBJECTIVE:

To maintain stable bait fish populations while allowing for a harvest by commercial industries and local anglers.

TARGET:

To meet demand for an average annual harvest of 138,000 dozen bait fish by the year 2000.

DISCUSSION:

The demand for bait fish in Sudbury District is expected to increase in proportion to increased angling effort. This would result in a 12 per cent increase in the annual bait fish harvest. Bait fish are presently under harvested in specific areas of the District, particularly in remote waters of Zones 4 and 5. Therefore, it is assumed that the resource will be able to meet this projected demand.

3.2.4 COMMERCIAL FISH

OBJECTIVE:

To encourage the harvest of commercial fish populations in Georgian Bay under the quota management system, when biologically and economically feasible.

TARGET:

To sustain a harvest quota of 50,225 kg. per year, to the year 2000, for commercially available fish species on Georgian Bay.

DISCUSSION:

New commercial fishing licenses are not expected to be issued for Georgian Bay or other waterbodies in the District during this planning period (1990 - 1995). Most of the commercially available

species are presently being harvested below the allowable quota due to market conditions. Quotas are reviewed annually and will be changed if biological information indicates a need.

3.3 GENERAL MANAGEMENT STRATEGIES AND TACTICS

General management strategies and tactics which will address fisheries problems and issues across the District are described below, in order of importance.

PROBLEM: LOSS OR DEGRADATION OF FISH HABITAT

STRATEGY: INVENTORY AND ASSESS FISHERIES HABITAT

Tactics:

1. Conduct inventory of critical fish habitat in major lakes, rivers and streams. Priority will be with waterbodies where shoreline development or resource extraction is planned.

2. Update old lake and stream surveys as necessary to ensure accurate documentation of critical fish habitat.

STRATEGY: PROTECT FISHERIES HABITAT

Tactics:

1. Provide input to both internal and external plans and proposals to ensure fisheries habitat needs are addressed, (e.g. environmental assessments; severance; subdivision; and shoreline development proposals; other resource management plans; road proposals; municipal plans; hydro electric development proposals; etc.).

2. Enforce protective legislation to prevent habitat degradation, (eg. Fisheries Act, Lakes and Rivers Improvement Act, etc.).

3. Work with landowners, municipalities, resource extraction industries and other agencies to develop ways to protect fish habitat by minimizing impacts of shoreline modifications, agricultural practices and drainage programs.

4. Protect fish habitat in waters where drawdowns occur by negotiating water flow agreements with MNR; Ontario Hydro; INCO; EB EDDY Ltd.; Federal Transport Ministry and other development groups which require water for hydroelectric generation.

5. Ensure that proposals for small hydroelectric developments result in no net loss of fish habitat by working with applicant to develop provisions to enhance or replace the affected area.

STRATEGY: IMPROVE FISH HABITAT

Tactics:
1. Support Community Fisheries Involvement Program (CFIP) projects which improve fisheries habitat.

2. Work with Bell Canada; Ministry of Transportation of Ontario (MTO); and other agencies and conduct on-site inspections of projects such as road construction; under-water cable installation; dredging or clearing activities to incorporate fish habitat enhancement with excavation.

3. Bypass or remove obstructions to fish passage in rivers and streams where feasible.

PROBLEM: EXPLOITATION

STRATEGY: PROVIDE NEW ANGLING OPPORTUNITIES FOR WALLEYE AND TROUT

Tactic:
1. Introduce walleye or trout into suitable District waters.

STRATEGY: REDIRECT ANGLING PRESSURE TO UNDER-USED LAKES OR SPECIES OTHER THAN WALLEYE AND TROUT

Tactics:
1. Provide input to other resource management plans to redirect new access roads to lakes which support fish species other than walleye and/or trout.

2. Communicate with anglers in the field to encourage them to harvest northern pike, bass, perch, lake whitefish, burbot, suckers where appropriate.

STRATEGY: CONTROL ILLEGAL FISH HARVEST

Tactics:
1. Redirect enforcement efforts to problem areas during spawning seasons.

2. Enhance public awareness of fisheries regulations through media coverage; issuance of regular newsletters; press releases and field contacts.

STRATEGY: REDUCE HARVEST

Tactic:
1. Implement sanctuaries or specific regulations to control catch limits in areas where data indicates that this is the most appropriate fisheries management tactic.

PROBLEM: USER CONFLICTS

STRATEGY: RESOLVE CONFLICTS

Tactics:
1. Provide input to other resource management plans to re-direct proposed road corridors away from critical fisheries.

2. Continue to work with resource extraction companies and the tourist industry to develop mitigative measures in areas where existing road locations are in close proximity to critical fisheries.

PROBLEM: INSUFFICIENT FISHERIES DATA BASE

STRATEGY: UTILIZE EXISTING INFORMATION TO PROVIDE MANAGEMENT DIRECTION

Tactics:
1. Analyze or rework existing data to augment current knowledge and to assist with development of future fisheries management programs.

2. Amend DLUG to reflect updated knowledge of improved fisheries, (e.g. requiring re-classification of nine Lake trout lakes listed in Appendix 1).

STRATEGY: MONITOR FISHING PRESSURE AND HARVEST

Tactics:
1. Conduct aerial creel surveys twice (i.e one open ice and one ice season) every five years on a standard set District lakes (data set established in 1982-83) commencing in 1990, to monitor changes in fishing pressure.

2. Develop partnerships with MNR and tourist outfitters, cottage associations, game and fish clubs and interested anglers to collect creel information.

STRATEGY: ENHANCE FISHERIES DATA BASE

Tactics:
1. Conduct standard Aquatic Habitat Inventory Surveys to address information requirements for Timber Management and other resource management planning and to provide preliminary information for fish stocking.

2. Conduct stocking assessments on one stocked lake per year, to determine success of stocking programs in relation to management objectives, e.g. re-establishment of naturally reproducing fish populations.

PROBLEM: LACK OF PUBLIC AWARENESS

STRATEGY: PROVIDE INFORMATION

Tactics:
1. Communicate with local media to promote fisheries management programs.

2. Develop information and presentation packages which stress the importance and physical presence of fish habitat in local waters; and the legal obligations and responsibilities of shoreline property owners and developers to protect fish habitat. Distribute this information and make presentations lakeshore property owners; local realtors; camp owners' associations; contractors; developers and any other interested groups.

3. Use field contacts to solicit public and resource user opinions regarding fisheries management, problems and issues.

4. Develop slide presentations on various fisheries related topics and management programs for use in schools and other special group presentations.

STRATEGY: PROMOTE PUBLIC INVOLVEMENT IN FISHERIES MANAGEMENT

Tactics:
1. Encourage participation in CFIP projects.

2. Seek public and industry participation in planning initiatives, e.g. fisheries management plan, timber management plan.

3.4 FISHERIES MANAGEMENT ZONES: SPECIFIC PROBLEMS, STRATEGIES AND TACTICS

The fisheries management zones in Sudbury District were established to reflect existing fisheries resources; resource use patterns and fisheries-related problems. Based on these criteria, seven zones were proposed for the District (Figure 2).

Descriptions of individual zones are outlined below. Fisheries problems and related tactics are described in specific order of importance for each zone.

3.4.1 ZONE 1: French River Drainage area

The area within this zone for which Sudbury District is responsible is dominated by the Lower French River and its tributaries, extending from Georgian Bay on Lake Huron, to the Chaudiere Dam. A large portion of this zone lies within the French River Provincial Waterway Park and is regulated by the French River Provincial Park Management Plan, developed in accordance with Provincial Parks policy.

According to Provincial Policy for waterway parks, and consistent with the French River Waterway Park Management Plan, special seasons, size limits, and limits of catch may be established in wilderness zones and other zones where appropriate within the Park. Native (indigenous) fish species may be stocked for put-and-delayed-take sport fishing, except in Wilderness and Nature Reserve Zone waters isolated from the waterway proper, (i.e. the main River).

Complaints about poor fishing, especially for walleye, are common and creel surveys have confirmed that the French River is over-exploited. In addition to exploitation, some habitat problems exist and more fisheries data collection is required in Zone waters.

The long term strategy is to rehabilitate the zone's walleye fishery. Establishment of the French River as a separate angling division may facilitate implementation of the management strategies and tactics necessary to achieve this objective.

Major fisheries problems in waters of this zone include loss or degradation of fish habitat; over - exploitation, particularly for walleye in the French River; and user conflicts.

In addition to those tactics which apply across the District, those which will be applied to address fisheries problems specific to Zone 1 waters are described below, in order of priority.

ZONE 1. PROBLEM: HABITAT LOSS/DEGRADATION

1* Water level fluctuations may cause a decrease in winter fish habitat; loss of spawning habitat and a decrease in food production and fish productivity.

2* Extensive degradation of spawning habitat has occurred due to siltation, at Stoney Rapids on the French River.

MANAGEMENT TACTICS

1. Provide input to the Sturgeon River - Lake Nipissing - French River watershed advisory board to ensure maintenance of adequate water levels.

2. Develop partnerships with MNR and French River residents and tourist operators to improve the walleye spawn site at Stoney Rapids on the French River.

ZONE 1. PROBLEM: EXPLOITATION

1* District creel records indicate that walleye in the French River are over-harvested.

2* Poaching is a problem during walleye spawning season.

3* Additional angling opportunities are required in waters other than the French River.

MANAGEMENT TACTICS

1. Support CFIP stocking of walleye in suitable zone waters beyond the French River.

2. Utilize or rework existing data (French River Project 1974-1978, Gunn 1978), to develop the most appropriate method to reduce walleye harvest on the French River (e.g. reduced catch limits, slot-size limits, winter sanctuaries, catch and release).

3. Continue to monitor harvest on the French River by creel surveys to determine impact of walleye stocking on angler success.

4. Develop partnerships with MNR and tourist operators to reduce harvest of walleye through incentive programs which promote "catch and live release".

ZONE 1. PROBLEM: USER CONFLICTS

1* A local anglers; Indian bands and tourist operators are sometimes in conflict over use of the resource.

MANAGEMENT TACTICS

1. Encourage involvement of Native Indian Bands in CFIP and other fisheries management projects, to ensure an understanding of complexities and benefits of sound fisheries management.

2. Actively discourage the unlicensed sale / barter of fish by natives through regular enforcement.

3. Negotiate with natives to constrain food fishing below the Chaudiere Dam and in other areas near the French River mouth where potential conflict with the tourism industry and local anglers is significant.

3.4.2 ZONE 2. Georgian Bay

This area represents the inshore waters of Georgian Bay, extending from Fraser Bay, east to Key Harbour and south to the Bustard Islands.

The major existing use of the area's shallow-water fishery resource is through angling. Sport fishing occurs in near-shore areas at the French River mouth, and in bays along the shore, including Fraser Bay and Beaverstone Bay. Deep-water fishing for salmon is becoming increasingly popular with charter boat operators from Killarney. Commercial fishing occurs in off-shore areas extending south from Fraser Bay, Badgeley Island, Bustard Islands, and Champlain Island.

When fish communities, particularly walleye and trout species are rehabilitated, Georgian Bay has potential to provide an additional 11000 angling opportunities annually.

The major fisheries problems specific to this zone are:
insufficient fisheries information and user conflicts.
In addition to those tactics which apply across the District, the following tactics will be applied specifically to Sudbury's portion of Georgian Bay:

ZONE 2. PROBLEM: INSUFFICIENT FISHERIES DATA BASE

1* Information is lacking on fish populations and the impacts of exotic species introductions, for Sudbury District's portion of Georgian Bay.

2* Information is lacking regarding angler harvest in the bays and inlets between the French River mouth and Fraser Bay.

MANAGEMENT TACTICS

1. Conduct aerial creel survey in partnership with Espanola District, once every five years commencing in Spring 1994, to monitor fishing pressure along that part of Georgian Bay under the jurisdiction of both Districts.

2. Assist the Lake Huron Fisheries Assessment Unit to assess salmon spawning runs in Georgian Bay tributaries.

ZONE 2. PROBLEM: USER CONFLICTS

1* There is a perceived over-harvest of walleye as a result of combined pressures from commercial and recreational resource users.

2* A variety of user groups, including recreational anglers and commercial fishermen, local Indian bands and tourist operators are sometimes in conflict over use of the resource.

MANAGEMENT TACTICS

1. Continue to manage commercially harvested species by quota to regulate harvest and reflect fluctuations in fish stocks.

2. Support joint fisheries management projects with the commercial fishing industry and the tourist operators of Killarney. Utilize CFIP.

3. Actively discourage the unlicensed sale / barter of fish by natives through regular enforcement.

4. Negotiate with natives to constrain food fishing where conflict with other user groups is significant.

5. Encourage experimental use and development of live capture gear and techniques by commercial fishermen, to allow more selective harvests.

6. Allow harvest of non-quota coarse fish species such as suckers and encourage the private sector to develop new markets for these species.

7. Continue to support annual user group meetings for discussion of issues and resolution of conflicts with commercial fishermen and tourist operators.

3.4.3 ZONE 3. Killarney Unit

Zone 3 encompasses all of Killarney Provincial Park as well as Lake Panache. Also included is a concentration of lakes centered around the White Oak-Tyson Lakes and Wanapitei River drainage area. Emissions from smelters in the Sudbury area has contaminated several lakes in this zone and resulted in the elimination of some native fish populations. With the exception of lakes located within Killarney Provincial Park, the majority of water in this zone is accessible by road and experiences varying levels of angling pressure.

Fisheries management within Killarney Park is governed by the Killarney Park Management Plan and Provincial Parks policy for wilderness parks. This policy states that no fish will be stocked for put-and-take fishing purposes; use or possession of baitfish is prohibited and commercial fishing, including commercial baitfish harvest is not permitted on water bodies entirely enclosed within park boundaries. The Killarney Park Management Plan permits stocking of native fish species for research or rehabilitation purposes.

Lake Panache is the largest lake trout lake in this zone. On a per area basis, Lake Panache receives the greatest winter angling pressure in the District.

Underproducing waters in this zone account for more than 6000 ha. representing a potential annual yield of 5600 kg. of sport fish, (Appendix II). Improvements in water quality in acid stressed waters will facilitate fish stocking to provide more angling opportunities, particularly for walleye and trout.

The primary fisheries management strategy in this zone will be directed at rehabilitation of native fish populations.

Major fisheries problems evident in this zone include loss or degradation of fish habitat; exploitation; lack of public awareness; and insufficient fisheries data base. Tactics which will address these problems are described below, in order of priority.

ZONE 3. PROBLEM: HABITAT LOSS/DEGRADATION

1* Water quality in zone lakes is poor and some native fish populations have been eliminated or are not producing to their full potential as a result of the effects of acidification caused by emissions from smelters in the Sudbury area.

MANAGEMENT TACTICS

1. Consider liming as an interim water quality recovery measure when funding and policy permit.

2. Discontinue lake trout stocking on Bell Lake pending improvements in water quality.

3. Conduct rehabilitation stocking to re-establish a naturally reproducing walleye population in Mahzenazing Lake.

ZONE 3. PROBLEM: EXPLOITATION

1* There is a demand for increased walleye fishing opportunities in this zone.

2* Angling opportunities for trout species are limited in lakes other than Panache, due to loss of fish populations from the effects of acidification.

MANAGEMENT TACTICS

1. Support CFIP stocking of walleye in Lake Panache and rainbow trout in Little Penage Lake.

2. Conduct stocking of walleye in Mahzenazing Lake to re-establish a sport fishery in this lake.

ZONE 3. PROBLEM: LACK OF PUBLIC AWARENESS

1* Killarney Provincial Park provides an excellent opportunity to educate resource users to biological and fisheries management concepts.

MANAGEMENT TACTICS

1. Develop information facilities at Killarney Park to advertise Ministry fisheries management programs and rehabilitation efforts being conducted on lakes located within the park as well as throughout the District.

2. Utilize information facilities at Killarney Park to educate visitors about biological concepts such as acid rain effects, fish community structures; importance of fish habitat and healthy aquatic environments and potential impacts of shoreline alterations.

3. Incorporate activities provided in the Youth Fisheries Education Program (YFEP) as part of the Park's visitor services program.

ZONE 3. PROBLEM: INSUFFICIENT FISHERIES DATA BASE

1* Information is required to assess fish habitat; fish populations, fishing pressure and harvests and to identify lakes suitable for introducing walleye or trout.

2* Continued research is required to assess the impacts of acidification on fisheries resources and to develop rehabilitative techniques.

MANAGEMENT TACTICS

1. Conduct creel surveys on Lake Panache twice (i.e one open water and one ice season) every five years commencing 1993, to monitor fish population status, angling pressure, contribution of walleye stocking to angler creel, and angler success.

2. Conduct experimental stocking of two strains of lake trout (Killala vs Slate Islands) to acid stressed George and Peter Lakes to determine which strain yields best results (i.e. survival, growth, potential to achieve natural reproduction). Conduct annual assessments and provide summary reports of results.

3. Implement sanctuary on George and Peter Lakes, during 1990-1997 to facilitate stocking research for lake trout strain comparisons. This duration is required to allow the first year's stocking to spawn at least once prior to exposure to angling.

4. Conduct Aquatic Habitat Inventory Surveys on Gabodin, Little Gabodin and Lower White Oak Lakes to determine suitability for

stocking walleye.

5. Conduct aerial shoreline video survey on Lake Panache and Millerd Lake.

6. Develop partnerships with MNR, Laurentian University; Ministry of Environment (MOE) and/or Friends of Killarney to assess water quality on groups of acid stressed waters and to conduct research to develop rehabilitative techniques to recover native fish populations.

3.4.4 ZONE 4. Northwest Quadrant

Zone 4 is bordered to the west and south by the Vermilion River. The high quality stream fisheries found here, including Pumphouse and John Creeks help make this the most diversified fisheries zone in the District.

Fisheries resources in some areas have been subject to overharvesting and habitat destruction, attributed in part, to the relative ease of access provided by roads constructed for timber management and mineral exploration purposes. The current coldwater fish stocking program includes more than 20 lakes in this zone, which represents approximately 50% of all waters stocked in the District.

Three provincial parks located at Windy, Fairbank and Halfway Lakes, contribute to a diversity of recreational opportunities offered in this zone. Fisheries management in Halfway Park will be in accordance with the Park Management Plan and Parks policy for Natural Environment parks, which allows for strategies which enhance native species. Under the Parks policy, fisheries management in Fairbank and Windy Provincial Parks encourages provision of angling opportunities for native and non-native species for waters completely enclosed within park boundaries.

Commercial tourism is focused on that portion of the Spanish River watershed located within Sudbury District including Pogamasing and Onaping Lakes. Outpost camps exist on Friday, Onaping, Scotia, Rome and Kennedy Lakes. Windy Lake is also locally important to the tourism industry.

Rehabilitation efforts in this zone will be directed at bringing approximately 4000 ha. of water to full production potential, providing an additional sportfish yield of 3200 kg. (Appendix II).

Major fisheries problems in this zone include loss or degradation of fish habitat; exploitation; insufficient fisheries database; and user conflicts. Management tactics to address these problems on specific zone waters are ranked by priority and are described below.

ZONE 4. PROBLEM: HABITAT LOSS/DEGRADATION

1* Fish habitat on Onaping; Pogamasing; Armstrong and Ministic Lakes may be affected by water level fluctuations.

2* Many lakes and streams in this zone are not producing fish to their full potential due to a variety of stresses including illegal harvest, siltation and poor water quality.

MANAGEMENT TACTICS

1. Participate in planning process for Spanish River Management Plan to develop water flow agreements which will meet fish community needs in Onaping; Pogamasing; Armstrong and Ministic Lakes.

2. Continue restriction on use of live baitfish to prevent perch introductions in Joe and Tank Lakes.

3. Support Community Fisheries Involvement Program (CFIP) projects which improve fisheries habitat on Michaud River; Rapid River; and Sandcherry Creek.

4. Develop partnerships with MNR; Laurentian University and other agencies to assess feasibility of establishing walleye in Whitefish Lake, Ermatinger Township and to develop rehabilitative techniques on other degraded waters in this Zone.

ZONE 4. PROBLEM: EXPLOITATION

1* There is a demand for additional angling opportunities for walleye and trout species.

2* Poaching is a problem during walleye spawning season.

3* Unlicensed baitfish areas occur in remote townships.

MANAGEMENT TACTICS

1. Support annual CFIP stocking of walleye in Geneva and Ministic Lakes and rainbow trout in Boot; Loon and Shoe Lakes and the Upper Vermilion River.

2. Conduct annual MNR stocking of trout species to provide put and take angling opportunities in Caya; Clear; Hachey; Lost; MacDonald; Mousseau; Mud; Pistol; Poleline; Ross; Rudy; Second; Snider; and Souci for brook trout; Mud Hole and Twin Lakes for rainbow trout.

3. Continue to provide opportunities for dip net fishing, for herring and lake whitefish in Stull Lake, Ellis twp.; Muldrew Lake, Dublin twp.; and that portion of Onaping Lake in Munster twp.

4. License baitfish harvest areas if a demand develops in remote townships of Athlone, Botha, Dunbar, Fairbairn, LaFleche, Leinster, Morse, Muldrew, Roberts, Venturi, Stralak and Sweeny,twps.

5. Maintain season closures on the following waters: Fox Lake, Closed Jan. 1 to Feb. 28 annually; Vermilion River, from bridge at Hwy. 144, downstream to Hwy 17, open Jan. 1 to March 31 and the third Saturday in May to Dec. 31 annually.

6. Conduct MNR stocking of lake trout in alternate years, to supplement or re-establish native populations in Antrim, Cascaden; Fairbank; Fox; Halfway; Helen; Kumska; Windy; and Weequed Lakes.

ZONE 4. PROBLEM: USER CONFLICTS

1* The tourist industry and local anglers are in conflict over use of remote fisheries.

MANAGEMENT TACTIC

1. Ensure that no additional access is created to remote fisheries, particularly Friday; Kennedy; Rome and Scotia Lakes.

ZONE 4. PROBLEM: INSUFFICIENT FISHERIES DATA BASE

1* Insufficient fisheries data is available for effective input to other resource management plans and development proposals; and to identify new waters suitable for stocking.

2* Information is required to assess fish populations, fishing pressure and harvests.

3* Continued research is required to assess the impacts of acidification on fisheries resources and to develop rehabilitative techniques.

MANAGEMENT TACTICS

1. Monitor harvest on Vermilion and Onaping Lakes by conducting creel surveys twice (i.e one open ice and one ice season) every five years, commencing with Onaping in 1990. Provide summary reports of findings.

2. Conduct experimental stocking of two strains of lake trout (Killala vs Slate Islands) to acid stressed Michaud Lake to determine which strain yields best results (i.e. survival, growth, potential to achieve natural reproduction). Conduct annual assessments and provide summary reports of results.

3. Implement sanctuary on Michaud Lake, 1990-1997 to facilitate stocking research for lake trout strain comparisons. This duration is required to allow the first year's stocking to spawn at least

once prior to exposure to angling.

4. Conduct Aquatic Habitat Inventory Surveys on Little Michaud; Little Venetian; Lower Green; and Morton Lakes to determine suitability for stocking trout or walleye.

5. Conduct aerial shoreline video surveys on Onaping and Vermilion Lakes.

ZONE 4. PROBLEM: LACK OF PUBLIC AWARENESS

1* The three Provincial Parks located in this zone provide an excellent opportunity to educate resource users to biological and fisheries management concepts.

MANAGEMENT TACTICS

1. Develop information facilities at Halfway, Windy and Fairbank Parks to advertise Ministry fisheries management programs and rehabilitation efforts being conducted on lakes and streams located within the park as well as throughout the District.

2. Utilize information facilities at each Park to educate visitors about biological concepts such as fish community structures; importance of fish habitat and healthy aquatic environments and potential impacts of shoreline alterations.

3. Incorporate activities provided in the Youth Fisheries Education Program (YFEP) as part of Halfway Lake Park's visitor services program.

4. Work with Park Superintendents to develop resource management educational activities for use at Fairbank and Windy Lake Parks, pending establishment of visitor services programs at these parks.

3.4.5 ZONE 5. Northeast Quadrant

Zone 5 includes all land and water within Sudbury District located east of the Vermilion River and north of Wanapitei Lake and the CN line. It is bordered to the east by North Bay and Temagami Districts and by Kirkland Lake District to the north.

Management Planning for the Sturgeon River and Solace Waterway Parks has been assigned to Temagami District. However, fisheries management for waters contained within these parks will remain the responsibility of Sudbury Distraict.

This zone possesses the greatest amount of underproducing waters in the District, including approximately 9000 ha. of trout waters, representing a potential annual yield of more than 7000 kg. of fish, (Appendix II). The long term fisheries management goal is to rehabilitate these waters so that full production potential will

be realized.

Major fisheries problems include loss/degradation of fisheries habitat, primarily due to the effects of acidification; exploitation; and insufficient fisheries information. Management tactics which will address these problems are described below.

ZONE 5. PROBLEM: HABITAT LOSS/DEGRADATION

1* Water quality in zone lakes is poor and some native fish populations, (primarily fish communities associated with lake trout) have been eliminated or are not producing to their full potential as a result of the effects of acidification caused by emissions from smelters in the Sudbury area.

MANAGEMENT TACTICS

1. Consider liming as an interim water quality recovery measure when funding and policy permit.

2. Discontinue lake trout stocking in Donald and Chuggin Lakes pending further improvements in water quality.

ZONE 5. PROBLEM: EXPLOITATION

1* There is a demand for more angling opportunities for trout species.

2* Over-harvest is a concern in some lakes.

3* Poaching is a problem in some areas during walleye spawning season.

4* Unlicensed baitfish harvest areas occur in remote townships.

MANAGEMENT TACTICS

1. Support CFIP stocking for walleye in Wanapitei Lake and for rainbow trout in Cache and McFie Lakes and Mowat and Parkin Creeks.

2. Conduct annual MNR stocking of trout species to provide put and take angling opportunities in Little Italy; Lynn; Mine; Newton's Pothole; Skynner; and Wallin Lakes and Massey Creek for brook trout; Beaver Lake for splake.

3. License areas for baitfish harvest if demand develops in remote townships of Beresford; Clary; Creelman; Haentschel; Howey; Kelly; Marconi; McCarthy; McConnell; McLeod; Seagram; Selkirk; Sheppard; Telfer and Turner.

4. Provide information on catching and cooking burbot through creel surveys and conversations with anglers and tourist operators.

5. Maintain season closures on the following waters: Nelson Lake; Kukagami Lake - Open last Saturday in April to December 31; Wanapitei River, Fraleck Twp., downstream to the river mouth at MacLennan Twp. - Open Jan. 1 to March 31 and the third Saturday in May to Dec. 31 annually.

6. Conduct MNR stocking of lake trout in alternate years to supplement or re-establish native populations in Maskinonge; Parkin; Selkirk; and Selwyn Lakes.

7. Conduct stocking of MNR-reared walleye fingerlings to Pine and Framan Lakes, Fraleck township.

8. Consider stocking of juvenile lake trout, brook trout or splake to provide put-and-take angling opportunities in lakes where poor water quality exists, (e.g. Caswell; Colin Scott, Davis; Donald; Kettyle; Potvin; and Telfer, Lakes),
as an interim measure until lake trout reproduction is possible through further improvements in water quality.

ZONE 5. PROBLEM: INSUFFICIENT FISHERIES DATA BASE

1* Information is lacking on fish populations; fishing pressure; harvests and critical fish habitat for lakes and streams in this zone.

2* Aquatic Habitat Inventory Surveys are required to identify lakes which may be suitable for stocking of game fish.

3* Continued research is required to assess the impacts of acidification on fisheries resources and to develop rehabilitative techniques.

MANAGEMENT TACTICS

1. Conduct roving winter creel survey on Lake Wanapitei once every five years commencing in 1990, to determine fish population status; angler success and harvest.

2. Conduct experimental stocking of two strains of lake trout (Killala vs Slate Islands) to acid stressed Laundrie Lake to determine which strain yields best results (i.e. survival, growth, potential to achieve natural reproduction). Conduct annual assessments and provide summary reports of results.

3. Implement sanctuary on Laundrie Lake, 1990-1997 to facilitate stocking research for lake trout strain comparisons. This duration is required to allow the first year's stocking to spawn at least once prior to exposure to angling.

4. Conduct Aquatic Habitat Inventory Surveys on Carafel; Davis;

and Insect Lakes and Carafel Creek to document critical muskellunge habitat.

5. Conduct lake trout habitat assessment on Maskinonge Lake to estimate potential impacts of cottage lot development on lake trout population recovery.

6. Conduct Aquatic Habitat Inventory Survey on Twinkle and Christina Lakes to determine suitability for walleye stocking.

7. Maintain sanctuary on Bowland Lake to provide for acidification research.

3.3.6 ZONE 6. Southeast Quadrant

Zone 6 is situated partially within the North Georgian Bay Recreational Reserve. It includes the area east of the Wanapitei and south of the CN line. The southern portion of this zone includes Servos, Hoskin, Cosby and part of Martland Townships, as well as the West Arm of Lake Nipissing. Road access to lakes and streams in this zone is extensive and some areas experience heavy angling pressure.

Fish communities in waters of this zone are comprised primarily of naturally reproducing, warmwater species, including walleye, muskellunge, northern pike and smallmouth bass. Lake trout are found in Trout Lake.

Fisheries habitat degradation has occurred in some areas as a result of erosion, eutrophication, agricultural practices and shoreline development.

Major fisheries problems which occur in this zone include loss or degradation of fish habitat; exploitation; and insufficient fisheries data base. Specific management tactics which will address these problems are described below.

ZONE 6. PROBLEM: HABITAT LOSS/DEGRADATION

1* Production potential of walleye and muskellunge has been restricted by poor water quality and loss or degradation of spawning habitat caused by erosion and eutrophication, particularly in highly developed areas such Bear; Trout and Nepewassi Lakes and the West Arm of Lake Nipissing.

2* Agricultural drainage has degraded water quality and eliminated walleye spawning habitat at the mouth of Maskinonge Creek.

MANAGEMENT TACTICS

1. Support CFIP projects to improve spawning habitat in Bear Lake; Maskinonge Creek; Trout Lake; and the West Arm of Lake Nipissing.

ZONE 6. PROBLEM: EXPLOITATION

1* There is a demand for additional angling opportunities for walleye.

2* Over-harvest is reducing walleye populations in some lakes.

MANAGEMENT TACTICS

1. Support CFIP stocking of walleye in Bear and Trout Lakes.

2. Redirect enforcement effort to problem areas to reduce illegal harvest.

3. Conduct stocking of MNR-reared walleye in Lovering; Rock; and Sheppard Lakes.

ZONE 6. PROBLEM: INSUFFICIENT FISHERIES DATA BASE

1* Information is lacking on fish populations; fishing pressure; harvests and critical fish habitat for lakes and streams in this zone.

MANAGEMENT TACTICS

1. Conduct roving creel survey on Nepewassi Lake in winter 1992; and summer 1994 to determine fish population status; angler success and harvest.

2. Conduct aerial shoreline video surveys on Nepewassi; and Trout Lakes and the West Arm of Lake Nipissing.

3.4.7 ZONE 7. Sudbury Basin Urban Fishery

Zone 7 includes the urban area located within the Sudbury Basin nickel irruptive. This zone contains the majority of the District's urban population and the highest proportion of patented land. Lakes in the area are entirely road accessible and are heavily developed with industry as well as permanent and seasonal dwellings.

Commercial tourism is focused on recreational activities in and around the city of Sudbury. Urban and industrial development have had negative impacts on fish habitat and are the major cause of poor quality fishing in this zone.

Three lakes Long, Nepahwin and Ella have been stocked with trout species, as part of the District stocking program.

Major fisheries problems found in waters of this zone include loss or degradation of fish habitat; lack of public awareness; insufficient fisheries data base; and exploitation. Management tactics unique to this zone which will address these problems are described below, in order of priority.

ZONE 7. PROBLEM: HABITAT LOSS/DEGRADATION

1* Habitat destruction has been caused in part, by industrial pollution, acid precipitation; shoreland development; and dredge and fill activities. Serious contamination with acid and metals occurs in lakes located in the core of the Sudbury Basin, e.g. Silver, Clearwater, Lohi, Tilton, Chief, Hannah; and Middle Lakes.

MANAGEMENT TACTICS

1. Conduct intensive Aquatic Habitat Inventory Surveys on 33 lakes located within the City of Sudbury to identify areas of existing and potentially critical fish habitat. Document results for future input to development and watershed improvement plans.

2. Develop partnership with MNR, Sudbury Regional Municipality and Nickel District Conservation Authority (NDCA), to improve fish habitat in waters located within the Regional municipality or NDCA jurisdiction.

3. Consider liming as an interim water quality recovery measure when funding and policy permit.

ZONE 7. PROBLEM: LACK OF PUBLIC AWARENESS

1* Science North and the Lake Laurentian Conservation area provide excellent facilities to educate resource users to biological and fisheries management concepts within urban ecosystems.

MANAGEMENT TACTICS

1. Support establishment of 'hands-on' displays and activities at Science North and/or Lake Laurentian Conservation area to educate the public to effects of acid rain; biological concepts and the importance of fish habitat and the fisheries resource to Sudbury.

ZONE 7. PROBLEM: INSUFFICIENT FISHERIES DATA BASE

1* Information is lacking on fish populations; fishing pressure; harvests and status of critical fish habitat for lakes and streams in this zone.

2* Quantitative data is lacking to determine the effects of industrial and residential development on fish habitat.

MANAGEMENT TACTICS

1. Conduct roving creel survey concurrently on Ramsey, Richard, Whitewater and McFarlane Lakes twice (i.e. one open water and one ice season) every five years to determine fish population status; angler success and harvest.

2. Conduct aerial shoreline video surveys on McFarlane; Richard; Ramsey; Nepahwin; Whitewater and Whitson Lakes.

3. Develop partnerships with MNR; Laurentian University and other agencies to continue research to investigate quantitative effects of industrial pollution and residential development of fish habitat in urban waters.

4. Develop partnership with MNR and Laurentian University to re-establish flow between Ramsey and Bethel Lakes and to investigate the effect of this tactic on Northern Pike populations in Bethel Lake.

ZONE 7. PROBLEM: EXPLOITATION

1* More angling opportunities are required within the road accessible urban waters of the Regional Municipality.

2* Ramsey Lake receives significant winter fishing pressure.

MANAGEMENT TACTICS

1. Support CFIP stocking for walleye in McFarlane; Ramsey; Richard; and Whitson Lakes.

2. Stock splake in Ella and Nepahwin Lakes; brook trout in Norway and Tank Lakes.

3. Maintain season closure on Ramsey Lake - Jan.1 to Feb. 28, annually.

4. Develop partnership with MNR and Laurentian University to investigate ways to successfully introduce or re-establish walleye in Middle and Hannah Lakes; Northern Pike in Raft, Robinson, Laurentian and Bethel Lakes; and lake trout in Ramsey and Nepahwin Lakes.

4.0 IMPLEMENTATION

Strategies and tactics described in Section 3.3 which apply to all waters in the District, will be ongoing for the duration of the planning period, unless otherwise identified in the implementation

schedule, (Table 5). Tactics which are specific to individual zones and which will be carried out within the first operational period of the plan, i.e. April 1, 1990 to March 31, 1995, are described in Table 5. Planned locations of these activities are presented in Figures 2 and 3. Each tactic has been assigned a priority of High, Medium, or Low, according to its effectiveness, (e.g. cost:benefit) in addressing the management problem. The strategies and tactics identified in this plan will be implemented through:

1. Preparation of a 5-year implementation schedule outlining programs and projects proposed for the next 5 years.

2. Preparation of annual work plans specifying programs and projects to be approved and funded through the Ministry's normal budgeting process.

3. Development of partnerships with the MNR and Laurentian University; Conservation authorities; game and fish clubs, associations or municipalities.

4. MNR support for projects funded through special programs such as the Community Fisheries Involvement Program (CFIP).

5. Participation in the planning and undertaking of other Ministry of Natural Resources programs (e.g. timber management plans, Crown land dispositions, etc.).

6. Review of, and input to work plans and development proposals from other government agencies, municipalities and the private sector where opportunities for such input are provided.

This schedule will be revised or amended at five year intervals or as priorities change within the District. Amendment of priorities may result from new scientific knowledge, development of new management techniques or information gained from some of the projects themselves.

The implementation of this Fisheries Management Plan is subject to the requirements of the Environmental Assessment Act. Compliance with the requirements of the Act may result in changes to the tactics identified in this Plan.

4.1 EXPLANATION OF FUNDING IN IMPLEMENTATION SCHEDULE

The implementation schedule indicates which programs can be carried out using existing funding and which would require additional funding, including those which would benefit from partnership, CFIP or volunteer assistance, (Table 5). Programs are listed in order for implementation, as High (H), Medium (M), or Low (L) priority. More specific timing of projects will be identified in annual work plans.

TABLE 5. FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE: 1990 - 1995, SUDBURY DISTRICT

PROJECT - LOCATION	ADDITIONAL FUNDING REQUIRED	PRIORITY	TARGET YEAR
HABITAT MANAGEMENT PROBLEM ADDRESSED: Habitat Loss or Degradation			
Inventory and Assess Fisheries Habitat			
Conduct intensive habitat surveys on 33 urban lakes for input to future development plans.	YES	H	1990-91
Protect Habitat			
Provide Plan input:			
- Sturgeon River-Lake Nipissing-French River Watershed advisory board.	NO	H	ongoing
- Spanish River Watershed Management Plan.	NO	H	ongoing
Restrict use of live baitfish:			
- Joe Lake; Tank Lake.	NO	L	1990-95
Improve Habitat			
Develop partnerships and support CFIP to improve fish habitat:			
- on waters located within management jurisdiction of Regional municipality and NDCA;	YES	H	ongoing, commence 1990-91
- Stoney Rapids on the French River	YES	H	1990-91
- Rapid River; Sandcherry Creek; Michaud River	YES	M	1991-92
- Maskinonge Creek; Trout Lake; Bear Lake; West Arm of Lake Nipissing.	YES	M	1992-94

TABLE 5. FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE: 1990 - 1995, SUDBURY DISTRICT

PROJECT - LOCATION	ADDITIONAL FUNDING REQUIRED	PRIORITY	TARGET YEAR
HABITAT MANAGEMENT PROBLEM ADDRESSED: Habitat Loss or Degradation			
Improve Habitat, continued			
Consider liming as an interim measure in acidified waters of Zones 3;5,and 7.	YES	L	1990-95
Discontinue stocking until water quality improves: Bell; Donald; Chuggin Lakes.	NO	H	as of 1990
Re-introduce walleye: Whitefish Lake, Ermatinger twp.;	YES	H	1990-92
-Mahzenazing Lake, Carlyle twp.	YES	H	1991;93;95
MANAGE HARVEST PROBLEM ADDRESSED: Exploitation			
Provide Angling Opportunities			
Support annual CFIP stocking: Walleye: French River and suitable waters in Zone 1; Zone 4-Geneva; Ministic; Zone 5-Wanapitei; Zone 6-Bear; Trout; Zone 7-Ramsey; Richard; McFarlane and Whitson Lakes.	YES	H	1990-95
Rainbow trout: Zone 3-Little Penage; Zone 4-Boot; Loon; Shoe; Upper Vermilion River;Zone 5-McFie and Cache Lakes; Parkin and Mowat Creeks.	YES	H	1990-95

TABLE 5. FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE: 1990 - 1995, SUDBURY DISTRICT

PROJECT - LOCATION	ADDITIONAL FUNDING REQUIRED	PRIORITY	TARGET YEAR
MANAGE HARVEST			
PROBLEM ADDRESSED: Exploitation			
Provide Angling Opportunities, Continued			
Conduct annual MNR stocking: Brook trout: Zone 4-Snider; Poleline; Pistol; Lost; MacDonald; Second; Hachey; Mousseau; Souci; Caya; Clear; Rudy; Mud; Ross; Zone 5-Little Italy; Lynn; Mine; Newton's Pothole; Skynner; Massey Creek; Zone 7-Wallin; Norway; and Tank Lakes.	NO	H	1990-95
Rainbow trout: Zone 4- Mudhole; Twin Lakes	NO	H	1990-95
Splake: Zone 5-Beaver Lake; Zone 7- Ella; Nepahwin Lakes.	NO	H	1990-95
Re-direct Angler Pressure			
Provide opportunities for alternate use: Dip net fishing for herring and lake whitefish: Zone 4: - Muldrew; Stull Lakes and that portion of Onaping Lake within Munster Twp.	NO	H	1990-95
License new areas for baitfish harvest: ZONE 4 townships: - Athlone; Botha; Dunbar; Fairbairn; LaFleche; Leinster; Morse; Muldrew; Roberts; Stralak; Sweeny; Venturi;	NO	H	1990-95 by demand

TABLE 5. FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE: 1990 - 1995, SUDBURY DISTRICT

PROJECT - LOCATION	ADDITIONAL FUNDING REQUIRED	PRIORITY	TARGET YEAR
MANAGE HARVEST			
PROBLEM ADDRESSED: Exploitation			
ZONE 5 townships: - Beresford; Clary; Creelman; Haentschel; Howey; Kelly; Marconi; McCarthy; McConnell; McLeod; Seagram; Selkirk; Sheppard; Telfer.	NO	H	1990-95 by demand
Provide information on catching and cooking burbot. - Lake Wanapitei	NO	L	1990;95
Reduce Harvest			
Use available data to choose best methods to reduce harvest on French River.	NO	H	1990-95
Monitor walleye harvest on French River.	YES	M	1992
Season closures: - Fox; Kukagami; Nelson; and Ramsey Lakes; Vermilion and Wanapitei Rivers.	NO	H	1990-95
Develop partnerships to promote "catch and live release" for walleye on the French River.	NO	L	1990-95
Control Illegal Fish Harvest			
Redirect enforcement effort to problem areas: Zone 6.	YES	M	1990-95

TABLE 5. FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE: 1990 - 1995, SUDBURY DISTRICT

PROJECT - LOCATION	ADDITIONAL FUNDING REQUIRED	PRIORITY	TARGET YEAR
MANAGE HARVEST			
PROBLEM ADDRESSED: Exploitation			
Supplement/Re-establish Native Fish Populations			
PROBLEM ADDRESSED: Exploitation; Habitat Loss or Degradation			
Stock lake trout: Zone 4:			
- Cascaden; Fox; Halfway; Helen; Weequed; and Windy Lakes	NO	H	1990;92;94
- Zone 4-Antrim; and Kumska Lakes; Zone 5- Selkirk; Selwyn; and Parkin Lakes	NO	H	1991;93;95
- Zone 4-Fairbank Lake	NO	H	1990;95
Stock walleye:			
- Zone 5-Pine; Framan Lakes	NO	H	1990;91;94
- Zone 6-Rock Lake;	NO	H	1990;93;94
- Lovering; Sheppard Lakes	NO	H	1991;92;95
Develop partnerships to facilitate fish introductions in Zone 7:			
- Walleye: Middle and Hannah Lakes	YES	M	1993
- Northern Pike: Raft; Robinson; Laurentian; and Bethel Lakes	YES	M	1992-93
- Lake Trout: Nepahwin; and Ramsey Lakes.	YES	M	1993
RESOLVE USER CONFLICTS			
PROBLEM ADDRESSED: User Conflicts			
Ensure no additional access is created to remote fisheries, particularly in Zone 4.	NO	H	ongoing

TABLE 5. FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE: 1990 - 1995, SUDBURY DISTRICT

PROJECT - LOCATION	ADDITIONAL FUNDING REQUIRED	PRIORITY	TARGET YEAR
RESOLVE USER CONFLICTS			
PROBLEM ADDRESSED: User Conflicts			
Continue quota management of commercially fish species on Georgian Bay.	NO	H	ongoing
Include natives in fisheries management through negotiations; CFIP and enforcement.	NO	M	ongoing
Encourage joint fisheries projects with commercial fish and tourism industries and native bands.	NO	M	ongoing
Encourage use of live capture gear for commercial fish harvest on Georgian Bay and Lake Wanapitei.	NO	L	ongoing
Allow harvest of non-quota species on Georgian Bay, and encourage development of new markets for these species.	NO	L	ongoing
OBTAIN FISHERIES DATA			
PROBLEM ADDRESSED: Insufficient Fisheries Data Base			
Monitor Fishing Pressure and Harvest			
Conduct aerial creel surveys:			
- on a series of inland lakes	YES	H	1990-91;95
- Georgian Bay, in association with Espanola District.	YES	H	1994
Conduct ground creel surveys:			
- Lake Wanapitei	YES	H	1990;95 (winter)
- Onaping Lake	YES	H	1990 (summer) 1992 (winter)

TABLE 5. FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE: 1990 - 1995, SUDBURY DISTRICT

PROJECT - LOCATION	ADDITIONAL FUNDING REQUIRED	PRIORITY	TARGET YEAR
OBTAIN FISHERIES DATA			
PROBLEM ADDRESSED: Insufficient Fisheries Data Base			
Monitor Fishing Pressure and Harvest			
- French River	YES	H	1991 (summer)
- Panache Lake	YES	H	1992-93
- Vermilion; Whitewater Lakes	YES	H	1991(winter) 1993(summer)
- Nepewassi Lake	YES	H	1992(winter) 1994(summer)
- Ramsey; Richard; McFarlane Lakes	YES	M	1994(winter)
Enhance Fisheries Data Base			
Conduct experimental stocking and report results for Lake Trout strain comparison:			
- George; Laundrie; Michaud; and Peter Lakes.	YES	H	1990-91; 1993;95
Conduct Aquatic Habitat Inventory Surveys to assess fish habitat and to find suitable waters for stocking walleye or trout species:			
- Zone 5-Insect; Davis; Carafel; and Maskinonge Lakes	YES	H	1990
- Zone 3-Gabodin; Brady; Little Gabodin and Little White Oak Lakes	YES	H	1992

TABLE 5. FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE: 1990 - 1995, SUDBURY DISTRICT

PROJECT - LOCATION	ADDITIONAL FUNDING REQUIRED	PRIORITY	TARGET YEAR
OBTAIN FISHERIES DATA, Continued PROBLEM ADDRESSED: Insufficient Fisheries Data Base			
- Zone 5- Twinkle and Christina Lakes	YES	H	1993
- Zone 4-Little Michaud; Little Venetian;Lower Green; and Morton Lakes	YES	H	1994
Conduct aerial shoreline video surveys:			
- Nepewassi; and Trout Lakes and West Arm of Lake Nipissing	YES	H	1992
- Onaping; Panache and Millerd Lakes	YES	H	1993
- Ramsey; McFarlane; Richard; Whitewater; Vermilion and Nepahwin Lakes.	YES	H	1994
Assist Lake Huron Fisheries Assessment Unit to assess salmon spawning runs in Georgian Bay tributaries.	YES	L	1993
Develop partnerships to:			
1. Assess water quality and to develop rehabilitative techniques for waters in Zones 3 and 7	YES	M	ongoing
2. Conduct acidification research on Bowland Lake.	YES	H	ongoing
3. Re-establish flow between Ramsey and Bethel Lakes and to report effects on Northern Pike population in Bethel Lake.	N	L	1992

TABLE 5. FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE: 1990 - 1995, SUDBURY DISTRICT

PROJECT - LOCATION	ADDITIONAL FUNDING REQUIRED	PRIORITY	TARGET YEAR
PROVIDE INFORMATION			
PROBLEM ADDRESSED: Lack of Public Awareness			
Develop partnerships to establish "hands on" fisheries displays at Science North.	N	M	1991-ongoing
Develop and utilize fisheries information facilities and incorporate YFEP to visitor services programs at District Provincial Parks.	Y	L	one park p year, commencing 1991
Work with Park superintendents to develop fisheries educational activities for Windy and Fairbank Parks.	Y	L	1993; 1995

5.0 PUBLIC REVIEW

The Ministry of Natural Resources is committed to public involvement in its management programs. Through this participation, we receive ideas which may lead to more effective resource management.

When you have read this document, please complete the questionnaire provided on the next page, and submit it to the Sudbury District Office by April 4, 1990. Your comments will be considered in preparation of the final, approved Sudbury District Fisheries Management Plan, 1990-2000.

SUDBURY DISTRICT
DRAFT FISHERIES MANAGEMENT PLAN, 1990 - 2000:
PUBLIC PARTICIPATION

After reviewing this Draft Fisheries Management Plan, you are invited to submit comments on the proposed management of the fisheries resource in Sudbury District. All comments will be considered during of the Final Fisheries Management Plan. Any input received, will be considered public information.

Please forward your comments by April 4, 1990 to:

District Manager
Ministry of Natural Resources
Sudbury District
P.O. Box 3500, Station 'A'
Sudbury, Ontario P3A 4S2

Please provide your name and mailing address in the space below if you wish to receive a copy of the Final Fisheries Management Plan.

NAME:_____

MAILING ADDRESS:_____

_____

_____

POSTAL CODE: _____

Are you officially representing a specific group or organization:

Yes_____ No_____

If yes, name of group:_____

Do you feel that this draft Plan effectively addresses the need of fisheries management in Sudbury District?

Yes_____ No_____

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GLOSSARY OF TERMS

ALLOWABLE YIELD

. Expresses the amount, in kilograms, of fish, by species, that may be angled from a body of water, without jeopardizing that species' ability to sustain itself.

ANGLING OPPORTUNITY

. Measure of supply to indicate the amount of use. An angling opportunity may be defined as one fishing trip not exceeding one angler day (four hours) in length.

ARTIFICIAL FISHERY (see Put and Take Fishery)

. A fishery which is maintained entirely through plantings of hatchery reared fish, in order to provide angling opportunities.

BAITFISH

. Any member of the minnow family, except carp and goldfish; the mudminnow family; the stickleback family; the trout-perch family; the sculpin family; the whitefish family (creek chub only) and the darter subfamily.

COLDWATER FISH COMMUNITY

. Fish populations comprised primarily of trout and salmon, and whitefish subfamilies, as well as burbot and herring families.

COLDWATER LAKES /STREAMS

. Those waterbodies capable of supporting coldwater fish communities.

COMMERCIAL FISH

. Those species captured from Lake Huron - Georgian Bay waters, under authority of a commercial licence, and marketed for human consumption. The most common commercial fish species in the Sudbury District are lake whitefish and chub.

COMMUNITY FISHERIES INVOLVEMENT PROGRAM (CFIP)

. A program initiated in 1981 to encourage the public to actively participate with the Ministry of Natural Resources in fisheries management projects designed to directly benefit the fisheries resource.

CRITICAL FISH HABITATS

. Any fish habitat required for the maintenance of a healthy fish population, or otherwise identified as essential to the achievement of the Ministry's fishery program objectives. The availability of such habitats is usually limited and they are often very sensitive to environmental change. Critical fish habitats include:

(a) Headwater areas (e.g. springs): the source of water to downstream areas, and often important for spawning.

(b) Spawning areas: essential for reproduction and frequently limited in availability. Areas of aquatic vegetation, rapids and boulder, rock-rubble and gravel bottom materials are to be considered spawning areas. Where most of the lake is rock-rubble, the most valuable area is that which receives significant wave action from prevailing winds.

(c) Nursery areas: provide food and protective cover for young fish.

(d) Wetlands: areas of shallow water characterized by the presence of aquatic vegetation. Wetlands stabilize water flow and frequently provide spawning or nursery habitat for fish.

(e) Migration areas: provide access to spawning, nursery and other habitats.

CURRENT FISHERIES PRODUCTION (YIELD)

. Expresses the fish production under existing circumstances given that, due to the presence of some under - producing waters, the total potential fisheries production (yield) is not currently being realized.

FISHERY

. a term that is usually used to describe the human use of a group of fish, and includes catching, preparing and selling the fish.

GOAL

. A general purpose to which the Ministry aspires. Goals will usually remain from term to term.

NATIVE FISH SPECIES

. Self-reproducing fish species native to a particular ecosystem, region or area, i.e., those species that occurred in Ontario before the North American settlement.

OBJECTIVE

- States what is to be done (i.e.a quantifiable and attainable end) and for whom (i.e. beneficiary(s)). Objectives will generally remain unchanged from term to term.

POTENTIAL PRODUCTION (YIELD)

- The theoretical maximum production that can be taken annually without exhausting the compensatory reserve of a fish community. The term is similar to sustainable yield. Potential production is not to be considered as a target.

PROJECTED YIELD

- The estimated fisheries production at the year 2000, which is based upon changes in fish stocks as well as realizing a proportion of the potential production from waters currently rated as under - producing.

PUT AND TAKE FISHERY

- Identical to an artificial fishery.

REHABILITATION

- The repair of a degraded aquatic ecosystem to a condition that sustains a fishery resource.

RESIDENT

- An angler whose principle residence is in Ontario.

SPORT FISH

- Fish species which are sought and may be legally taken by angling, under the authority of an angling licence. In the Sudbury District this usually includes fish from the trout, walleye, perch, pike, muskellunge and bass families.

STRATEGY

- Broadly stated planned means of achieving a target. May also be proposed to address an objective and/or to solve a problem/issue. Strategies may be revised from term to term, depending on their evaluated effectiveness at achieving objectives.

SUSTAINABLE BENEFIT

. Something that satisfies present and future human needs and aspirations, such as a high quality environment, wholesome food, employment and income, recreational activity, and cultural heritage.

TACTICS

. A specific method designed to achieve one or more strategies.

TARGET

. A quantified end to be achieved by a specific date. Targets are directly linked to objectives and may be revised from term to term, to reflect resource capabilities, changing demands and corporate priorities.

UNDER - PRODUCING WATERS

. Lakes and/or streams which, for some reason, have been withdrawn from fish production or, are not producing at their estimated biological potential.

WARMWATER FISH COMMUNITY

. Fish populations comprised primarily of the bass family, and also includes pike, muskellunge, perch and walleye for the purpose of this plan.

WARMWATER LAKES/STREAMS

. Those waterbodies capable of supporting warmwater fish communities.

APPENDIX I

RECLASSIFICATION OF SUDBURY DISTRICT LAKE TROUT LAKES

FISHERIES MANAGEMENT ZONE	TOWNSHIP	LAKE NAME	CRITERIA FOR CHANGE
A1 Lakes:			
5	Fraleck	Fraleck	Original DLUG category: C lake. Lake trout natural reproduction confirmed (SBS,1987); no privately owned land.
5	Howey	Bowland	Original DLUG category: C lake. Lake trout recovery confirmed (B.A.R.1987;88); no privately owned lakeshore.
5	Sheppard	Pedro	Original DLUG category: C lake. Confirmed survival of lake trout to angler creel (SBS assessment 1988;89); population is supplemented by stocking. No privately owned lakeshore.
A2 Lakes:			
5	Kelly/McCarthy	Maskinonge	Original DLUG category: C lake. Angler creel (winter 89) confirms recovery of lake trout.

APPENDIX I (Continued)
RE-DESIGNATED LAKE TROUT LAKES

FISHERIES MANAGEMENT ZONE	TOWNSHIP	LAKE NAME	CRITERIA FOR CHANGE
B1 Lakes:			
4	Beaumont	Helen	Original DLUG category: C lake. Field contacts (winter 89;90) with anglers confirm stocked lake trout are being harvested water quality may be limiting natural reproduction.
5	Tyrone	Michaud	Original DLUG category: C lake. Lake trout survival confirmed; (SBS 1987;88); water quality limits natural reproduction. No privately owned lakeshore.
B2 Lakes:			
3	Killarney	George	Original DLUG category: C lake. Lake trout survival confirmed, (SBS 1987-89).
4	Morse/ LaFleche	Pogamasing	Original DLUG category: C lake. Changed from B1 category due to presence of privately owned lakeshore, (commercial tourist establishment).
3	Secord	Millerd	Original DLUG category: C lake. Changed from B1 category due to presence of private lakeshore land (cottages).

APPENDIX II
SURFACE AREA FOR UNDERPRODUCING WATERS AND POTENTIAL ALLOWABLE YIELD FOR REHABILITATED FISH COMMUNITIES

LAKE/ STREAM SURFACE AREA (ha.)

Zone	1	2	3	4	5	6	7	TOTAL
COLDWATER	10		5590	3832	8966		1612	20010
WARMWATER	100		472	42	495	104	1992	3200
TOTAL	110	155500	6062	3875	9461	104	3604	178710

POTENTIAL ANNUAL YIELD (kg/yr)

Zone	1	2	3	4	5	6	7	TOTAL
TROUT	8	31225	4612	3161	7397		1330	47733
WALLEYE	118	8000	558	49	586	123	2358	11792
OTHER	92	15300	436	39	458	96	1842	18263
TOTAL	218	54525	5606	3249	8441	219	5530	77788

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MAPS
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